

REMARKS

Claims 21-23, 25, 42-64 and 68-70 are pending with claims 21, 47 and 56 being independent. Claims 21, 47 and 56 have been amended. Support for the amendments is provided in the specification at least in FIGS. 5E and 24B and the related description, for example. No new matter has been presented.

35 U.S.C. 103(a) - Claims 21, 42, 43, 57, 51 and 52

Claims 21, 42, 43, 47, 51 and 52 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasaki (Japanese Patent Publication No. 08-288515 (U.S. Patent 5,759,879 used as a translation)) in view of Okamura (Japanese Patent Publication No. 08-306928 with machine translation). Applicant requests reconsideration and withdrawal of this rejection because neither Iwasaki, Okamura, nor any proper combination of the two describes or suggests that "a halogen element is contained in said semiconductor film with a concentration of 1×10^{15} to 1×10^{20} atoms/cm³," as recited in claims 21 and 47.

However, as acknowledged in the Office Action, Iwasaki fails to describe or suggest that the "atoms constituting the different crystals at the grain boundary correspond to each other respectively or have dangling bonds neutralized by hydrogen or halogen elements," as recited in claims 27 or 47. Further, Iwasaki fails to describe or suggest that "a halogen element is contained in said semiconductor film with a concentration of 1×10^{15} to 1×10^{20} atoms/cm³," as recited in claims 21 and 47.

Okamura, which is cited in the Office Action as teaching that the "atoms constituting the different crystals at the grain boundary correspond to each other respectively or have dangling bonds neutralized by hydrogen or halogen elements," also fails to describe or suggest the above features. Okamura describes a hydrogenation method and a hydrogenation device to improve a characteristic of a transistor where the transistor's characteristic was degraded from a dangling bond of silicon, and the transistor's characteristic can be improved by terminating the dangling bond with a hydrogen item (Okamura: paragraphs [0001], [0002], claims 1 and 4). Okamura

provides no description or suggestion that "a halogen element is contained in said semiconductor film with a concentration of 1×10^{15} to 1×10^{20} atoms/cm³," as recited in claims 21 and 47.

For at least these reasons, the rejection of independent claims 21 and 47, and dependent claims 42, 43, 51 and 52, should be withdrawn.

35 U.S.C. 103(a) - Claims 22 and 48

Claims 22 and 48, which depend upon claims 21 and 47, stand rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasaki and Okamura in view of Erhart (U.S. Patent No. 5,572,211). Applicant requests reconsideration and withdrawal of this rejection because Erhart, which is cited as allegedly teaching capacitors and thin film transistors in an active matrix display in a personal computer, does not remedy the failure of Iwasaki and Okamura to describe or suggest all of the features of claims 21 and 47.

35 U.S.C. 103(a) - Claims 23, 25, 46, 49, 50 and 55

Claims 23, 25, 46, 49, 50 and 55, which depend upon claims 21 and 47, stand rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasaki and Okamura in view of den Boer (U.S. Patent 5,539,219). Applicant requests reconsideration and withdrawal of this rejection because den Boer, which is cited for allegedly teaching a pixel electrode, an opposite electrode, a liquid crystal between the electrodes, and a limitation on the channel length, does not remedy the failure of Iwasaki and Okamura to describe or suggest all of the features of claims 21 and 47.

35 U.S.C. 103(a) - Claims 44, 45, 53 and 54

Claims 44, 45, 53 and 54, which depend upon claims 21 and 47, stand rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasaki and Okamura in view of Kobayashi (U.S. Patent No. 3,925,803). Applicant requests reconsideration and withdrawal of this rejection because Kobayashi, which is cited for allegedly teaching rod-shaped silicon crystals in the TFT that are flattened at the top of the crystals, does not remedy the failure of Iwasaki and Okamura to describe or suggest all of the features of claims 21 and 47.

35 U.S.C. 103(a) - Claims 56, 60 and 61

Claims 56, 60 and 61 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasaki and Okamura in view of Inoue (U.S. Patent No. 6,153,893). Independent claim 56 is patentable over Iwasaki and Okamura at least for the same reasons as provided above with respect to claims 21 and 47. Applicant requests reconsideration and withdrawal of the rejection because Inoue, which is cited for allegedly teaching a manufacturing method for a lightly doped drain (LDD) structure for preventing pixel leakage, does not remedy the failure of Iwasaki and Okamura to describe or suggest all of the features of claim 56, such as "a halogen element is contained in said semiconductor film with a concentration of 1×10^{15} to 1×10^{20} atoms/cm³," As recited in claim 56.

35 U.S.C. 103(a) – Claim 57

Claim 57, which depends upon claim 56, stands rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasaki, Inoue, Okamura and Erhart. Applicant requests reconsideration and withdrawal of this rejection because Erhart, which is cited as allegedly teaching capacitors and thin film transistors in an active matrix display in a personal computer, does not remedy the failure of Iwasaki, Inoue, and Okamura to describe or suggest all of the features of claim 56.

35 U.S.C. 103(a) – Claims 58, 59 and 64

Claims 58, 59 and 64, which depend upon claim 56, stand rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasaki, Okamura, Inoue and den Boer. Applicant requests reconsideration and withdrawal of this rejection because den Boer, which is cited for allegedly teaching a pixel electrode, an opposite electrode, a liquid crystal between the electrodes, and a limitation on the channel length, does not remedy the failure of Iwasaki, Okamura and Inoue to describe or suggest all of the features of claim 56.

35 U.S.C. 103(a) - Claims 62 and 63

Claims 62 and 63, which depends upon claim 56, stand rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasaki, Okamura, Inoue and Kobayashi. Applicant requests reconsideration and withdrawal of this rejection because Kobayashi, which is cited for allegedly teaching rod-shaped silicon crystals in the TFT that are flattened at the top of the crystals, does

not remedy the failure of Iwasaki, Okamura, and Inoue to describe or suggest all of the features of claim 56.

35 U.S.C. 103(a) - Claims 68-70

Claims 68-70, which depend from claims 21, 47, and 56, have been rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasaki and Okamura in view of Tran (U.S. Patent No. 5,534,445). Applicant requests reconsideration and withdrawal of this rejection because Tran, which is cited for allegedly teaching a silicon wafer, does not remedy the failure of Iwasaki and Okamura to describe or suggest all of the features of claims 21, 47 and 56.

Conclusion

It is believed that all of the pending issues have been addressed. However, the absence of a reply to a specific rejection, objection, issue, or comment, including the Office Action's characterizations of the art, does not signify agreement with or concession of that rejection, issue, or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment or cancellation of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment or cancellation. Applicant reserves the right to prosecute the rejected claims in further prosecution of this or related applications.


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The fee in the amount of \$810 for a request for continued examination (RCE) is being paid concurrently herewith on the Electronic Filing System (EFS) by way of Deposit Account authorization. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

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